

Displacement

1) A piece of copper wire placed in a solution of silver nitrate undergoes a displacement reaction. Give a detailed account of this reaction. You may refer to the Activity series in the Resource Booklet.

In your answer you should:

- describe any observations that would be made
- link these observations to the chemical species involved
- explain why the displacement reaction occurs
- write a balanced **ionic** equation for this reaction.

2) A clean iron nail placed in a solution of copper (II) sulfate undergoes a displacement reaction over a period of time. Discuss the chemistry of this displacement reaction. In your answer, you should:

- describe the physical changes that would occur
- relate each change to the chemical(s) involved
- fully explain why the displacement reaction occurs
- write a balanced **ionic** equation for the reaction.

3)



4) Some grey powdered magnesium was added to a green solution of iron (II) sulfate in a beaker, and mixed well. The green colour of the solution faded and the grey powder disappeared. A new dark grey solid formed on the bottom of the beaker.

(i) State what type of reaction this is.

(ii) Discuss what happened in this reaction. Your answer should link the reactants and products involved in the reaction to the observations made. Include an appropriate balanced equation in your answer. Spectator ions may be omitted.

5)

aluminium + silver nitrate \rightarrow _____ + _____

6) piece of zinc foil is added to copper (II) nitrate solution and left. It is checked after 10 minutes and then again after 24 hours.

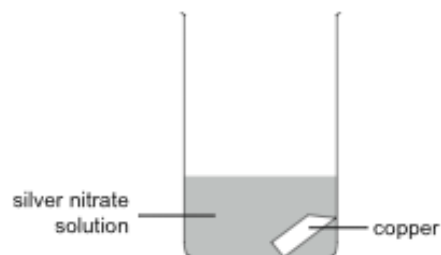
(i) Describe ONE observation that you would expect to make after 10 minutes.

(ii) Describe a **different** observation that you would expect to make after 24 hours.

(iii) Explain why BOTH of your observations above have occurred.

(iv) Write a balanced equation for this reaction. Spectator ions may be omitted.

7) A piece of **copper** is placed in a solution of **silver nitrate**.



(i) Describe TWO observations that would be made.